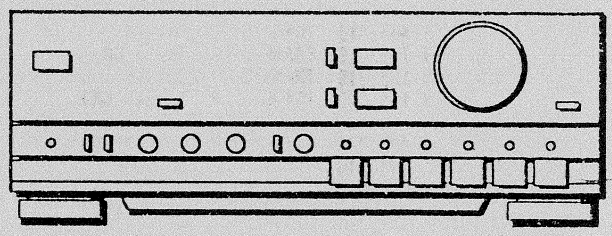
S/M Code No.89-071 DATE OF ISSUE 9/1989-T

AIWA®

XA-007

SERVICE MANUAL



STEREO INTEGRATED AMPLIFIER

● TYPE H,E,K,Z

SPECIFICATIONS

Common

Power requirements	XA-007E, Z 220 V, 50 Hz XA-007K, 240 V, 50Hz XA-007H 120 V/220 V/240 V (switchable), 50/60 Hz
Power consumption	XA-007E, K, Z 380 W XA-007H 125 W

Power amplifier

Effective output power	80 W+80 W (4–8 ohms, T.H.D. 0.9%, 1 kHz)
Total harmonic distortion	0.007% (20 Hz–20 kHz, 65 W, 8 ohms)
Output bandwidth	20 Hz–20 kHz (less than 0.05%) [Both channels driven, 8 ohms]
Frequency response	5 Hz–100 kHz (0/–3 dB)

Preamplifier

S/N ratio	IHF A curve short circuited PHONO (MM) 94 dB (5 mV INPUT) PHONO (MC) 75 dB (0.5 mV INPUT) TUNER, DAT, VCR (AUX), TAPE 105 dB
Input jacks (Sensitivity/input impedance)	PHONO (MM) 2.5 mV/47 kohms PHONO (MC) 0.2 mV/100 ohms TUNER, DAT, VCR (AUX), TAPE 150 mV/47 kohms CD 150 mV/47 kohms
PHONO overload level	MM 150 mV [1 kHz, THD 0.01%]
Output jacks (Level/output impedance)	TAPE 150 mV/47 kohms Headphones 8–32 ohms Speakers 4–16 ohms (A+B: 8–16 ohms)
RIAA deviation	±0.5 dB (30 Hz–15 kHz)

Dimensions	430(W) × 140(H) × 335(D) mm
Weight	8.4 kg

• Design and specifications are subject to change without notice.

AIWA Co., Ltd.

Tokyo Japan

Printed in Japan

ELECTRICAL MAIN PARTS LIST

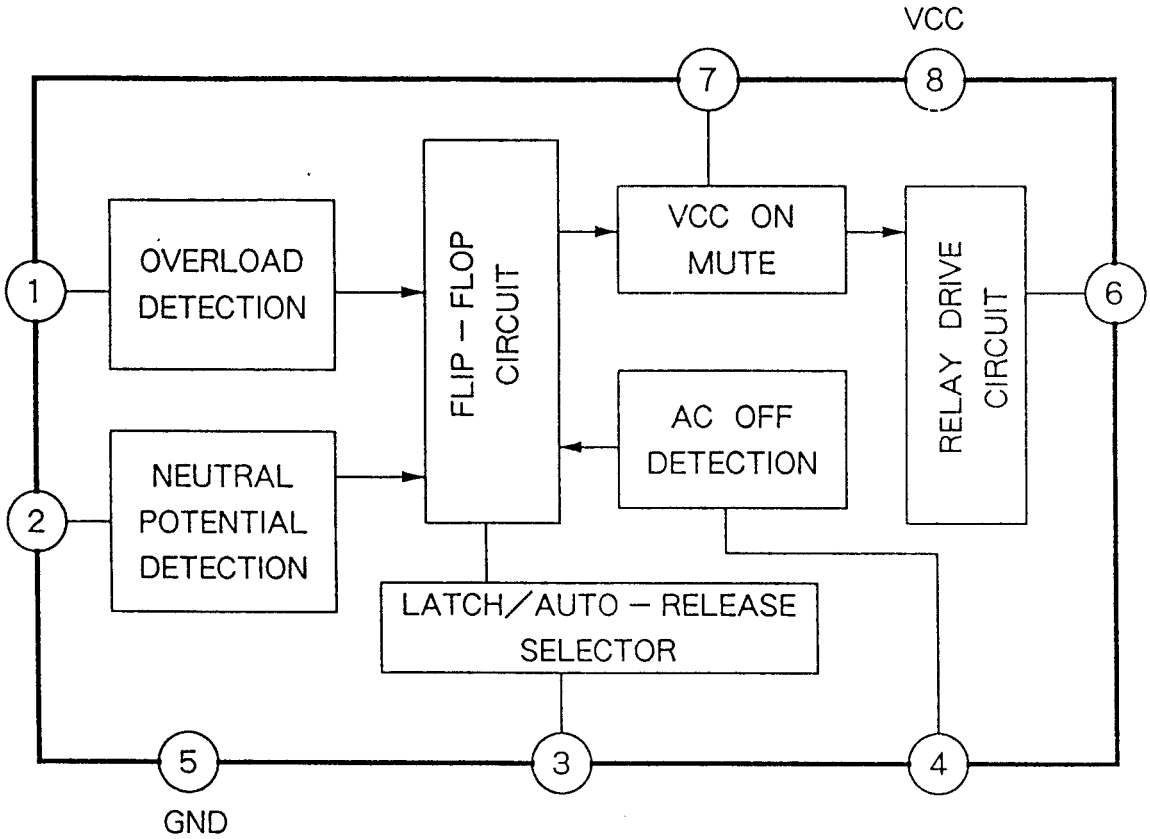
REF. NO.	PART NO.	DESCRIPTION
===IC===		
	87-001-171-019	IC, NJM2068D
	87-027-787-019	IC, UPC1237H
===TRANSISTOR===		
	89-501-706-019	FET, 2SK170BL/V
	89-110-155-019	TRANSISTOR, 2SA1015(GR)
	89-111-453-019	TRANSISTOR, 2SA1145(O)
	89-113-013-010	TRANSISTOR, 2SA1301(O)
	89-113-583-010	TRANSISTOR, 2SA1358
	89-109-705-019	TRANSISTOR, 2SA970 GR
	89-210-155-019	TRANSISTOR, 2SB1015
	89-318-155-019	TRANSISTOR, 2SC1815(GR)
	89-322-405-019	TRANSISTOR, 2SC2240(GR)
	89-322-591-010	TRANSISTOR, 2SC2259F
	89-327-053-010	TRANSISTOR, 2SC2705(O)
	89-332-803-010	TRANSISTOR, 2SC3280(O)
	89-334-194-019	TRANSISTOR, 2SC3419Y
	89-334-213-010	TRANSISTOR, 2SC3421
	89-414-065-019	TRANSISTOR, 2SD1406 GR
===DIODE===		
	87-020-110-019	DIODE 1SS177
	87-027-788-010	DIODE D5FB20
	87-020-123-019	DIODE DS446
	87-020-945-010	DIODE MPG06D
	87-027-449-019	DIODE, ZENER HZ15-3L
	87-027-416-019	DIODE, ZENER HZ3C2
===MAIN CIRCUIT BOARD SECTION===		
⚠	*87-033-147-019	FUSE CLAMP
C1	*87-018-125-019	CAP, CERA-SOL SS 330P
C2	*87-018-125-019	CAP, CERA-SOL SS 330P
C3	*87-012-110-019	CAP, CERA-SOL 270P BEAD(Z)
C4	*87-012-110-019	CAP, CERA-SOL 270P BEAD(Z)
C19	*87-018-128-019	CAP, CERA-SOL SS 560P
C20	*87-018-128-019	CAP, CERA-SOL SS 560P
C21	*87-010-263-019	CAP, ELECT 100-10V
C22	*87-010-263-019	CAP, ELECT 100-10V
C23	*87-010-404-019	CAP, ELECT 4.7-50V SME
C24	*87-010-404-019	CAP, ELECT 4.7-50V SME
C31	*87-010-260-019	CAP, ELECT 47-25V
C32	*87-010-260-019	CAP, ELECT 47-25V
C41	*87-010-405-019	CAP, ELECT 10-50V SME
C42	*87-010-405-019	CAP, ELECT 10-50V SME
C45	*87-018-127-019	CAP, CERA-SOL SS 470P
C46	*87-018-127-019	CAP, CERA-SOL SS 470P
C49	*87-010-263-019	CAP, ELECT 100-10V
C50	*87-010-263-019	CAP, ELECT 100-10V
C61	*87-018-103-019	CAP, CERA-SOL SS 8.2P
C62	*87-018-103-019	CAP, CERA-SOL SS 8.2P
C65	*87-018-131-019	CAP, CERA-SOL SS 1000P
C66	*87-010-762-019	CAP, ELECT 220-10 BP
C68	*87-010-404-019	CAP, ELECT 4.7-50V SME
C69	*87-010-260-019	CAP, ELECT 47-25V
C70	*87-010-401-019	CAP, ELECT 1-50V
C92	*87-018-134-019	CAP, CERA-SOL SS 0.01(Z)
C93	*87-010-384-019	CAP, ELECT 100-25V
C94	*87-010-384-019	CAP, ELECT 100-25V
C95	*87-018-121-019	CAP, CERA-SOL SS 150P(Z)
C96	*87-018-121-019	CAP, CERA-SOL SS 150P(Z)
C97	*87-018-121-019	CAP, CERA-SOL SS 150P(Z)
C201	*87-010-765-019	CAP, ELECT 10000-63
C202	*87-010-765-019	CAP, ELECT 10000-63
C203	*87-010-411-019	CAP, ELECT 1000-50 SME
C204	*87-010-411-019	CAP, ELECT 1000-50 SME
C205	*87-010-260-019	CAP, ELECT 47-25V
C206	*87-010-260-019	CAP, ELECT 47-25V
C207	*87-010-260-019	CAP, ELECT 47-25V
C208	*87-010-260-019	CAP, ELECT 47-25V
C209	*87-010-260-019	CAP, ELECT 47-25V
C210	*87-010-260-019	CAP, ELECT 47-25V
C221	*87-018-131-019	CAP, CERA-SOL SS 1000P(Z)
C222	*87-018-131-019	CAP, CERA-SOL SS 1000P(Z)
C231	*87-014-210-010	CAP, MYLAR 0.047-250V(Z)
C232	*87-014-210-010	CAP, MYLAR 0.047-250V(Z)
C241	*87-010-430-019	CAP, ELECT 100-63
C242	*87-010-430-019	CAP, ELECT 100-63
J2	87-009-023-019	JACK PIN YKC21-0349(PHONO)(TUNER)
J3	87-049-868-019	JACK PIN 4P(CD)(VCR/AUX)
J4	87-049-868-019	JACK PIN 4P(TAPE2/DAT)
J5	87-049-868-019	JACK PIN 4P(TAPE1)
L1	*87-005-158-010	COIL 1UH
L2	*87-005-158-010	COIL 1UH
L3	*87-007-265-010	COIL 100UH(Z)
L4	*87-007-265-010	COIL 100UH(Z)
LED1	87-001-779-019	LED SLH56VC RED-F(PHONO IND.)
LED2	87-001-779-019	LED SLH56VC RED-F(TUNER IND.)
LED3	87-001-779-019	LED SLH56VC RED-F(CD IND.)
LED4	87-001-779-019	LED SLH56VC RED-F(VCR/AUX IND.)
LED5	87-001-779-019	LED SLH56VC RED-F(TAPE2/DAT IND.)
LED6	87-001-779-019	LED SLH56VC RED-F(TAPE1 IND.)
⚠R115	*87-029-130-019	RES, FUSE 220-1W
⚠R116	*87-029-130-019	RES, FUSE 220-1W
R117	*87-025-434-010	RES, CEMENT 0.22-5W
R118	*87-025-434-010	RES, CEMENT 0.22-5W
R119	*87-025-434-010	RES, CEMENT 0.22-5W
R120	*87-025-434-010	RES, CEMENT 0.22-5W
R123	*87-025-347-010	RES, METAL 10-2W
R124	*87-025-347-010	RES, METAL 10-2W
R125	*87-025-120-010	RES, MFO 10-1W
R126	*87-025-120-010	RES, MFO 10-1W
⚠R201	87-029-094-019	RES, FUSE 15-1/4W
⚠R202	87-029-094-019	RES, FUSE 15-1/4W
⚠R227	87-029-082-019	RES, FUSE 100 1/4W
⚠R228	87-029-082-019	RES, FUSE 100 1/4W
⚠R243	87-029-089-019	RES, FUSE 4.7 1/4W
⚠R244	87-029-089-019	RES, FUSE 4.7 1/4W
RY1	87-045-281-010	RELAY, G5R24V SP
SW1	89-AA1-630-019	PUSH SW(PHONO)
SW2	+ + +	PUSH SW(TUNER)
SW3	+ + +	PUSH SW(CD)
SW4	+ + +	PUSH SW(VCR/AUX)
SW5	+ + +	PUSH SW(TAPE2/DAT)
SW6	+ + +	PUSH SW(TAPE1)
SW15	89-AA1-633-019	PUSH SW(CARTRIDGE)
SW16	89-AA1-639-010	ROTARY SW(REC OUT)
SFR1	*87-024-169-019	SFR 2.2K
SFR2	*87-024-169-019	SFR 2.2K
===FRONT CIRCUIT BOARD SECTION===		
C151	*87-018-126-019	CAP, CERA-SOL SS 390P
C152	*87-018-126-019	CAP, CERA-SOL SS 390P
C155	*87-010-401-019	CAP, ELECT 1-50V
C156	*87-010-401-019	CAP, ELECT 1-50V
C157	*87-018-121-019	CAP, CERA-SOL SS 150P
C158	*87-018-121-019	CAP, CERA-SOL SS 150P
C159	*87-010-403-019	CAP, ELECT 3.3-50V SME
C160	*87-010-403-019	CAP, ELECT 3.3-50V SME
C167	*87-018-123-019	CAP, CERA-SOL 220P
C168	*87-018-123-019	CAP, CERA-SOL 220P
C171	*87-010-260-019	CAP, ELECT 47-25V
C172	*87-010-260-019	CAP, ELECT 47-25V
C173	*87-010-404-019	CAP, ELECT 4.7-50V SME
C174	*87-010-404-019	CAP, ELECT 4.7-50V SME

REF. NO.	PART NO.	DESCRIPTION
C175	*87-018-129-019	CAP. CERA-SOL SS 680P
C176	*87-018-129-019	CAP. CERA-SOL SS 680P
C177	*87-010-401-019	CAP. ELECT 1-50V
C178	*87-010-401-019	CAP. ELECT 1-50V
C179	*87-010-404-019	CAP. ELECT 4. 7-50V SME
C180	*87-010-404-019	CAP. ELECT 4. 7-50V SME
C181	*87-010-260-019	CAP. ELECT 47-25V
C182	*87-010-260-019	CAP. ELECT 47-25V
LED10	87-001-779-019	LED SLH56VC RED-F(CD DIRECT IND.)
LED11	87-001-779-019	LED SLH56VC RED-F(MUTING IND.)
SW10	87-036-179-019	PUSH SW(LOUDNESS)
SW11	87-036-180-019	PUSH SW(CD DIRECT)
SW12	87-036-180-019	PUSH SW(MUTING)
SW14	87-036-179-019	PUSH SW(TONE DEFEAT)
VR1	81-777-630-019	VOLUME 100KB(VOLUME)
VR2	81-777-631-019	VOLUME 100K MN(BALANCE)
VR3	81-777-632-019	VOLUME 50KC(BASS)
VR4	81-777-632-019	VOLUME 50KC(TREBLE)
===SP TERMINAL CIRCUIT BOARD SECTION===		
C223	*87-018-134-019	CAP. CERA-SOL SS 0. 01(Z)
C224	*87-018-134-019	CAP. CERA-SOL SS 0. 01(Z)
C225	*87-018-134-019	CAP. CERA-SOL SS 0. 01(Z)
C226	*87-018-134-019	CAP. CERA-SOL SS 0. 01(Z)
C227	*87-018-133-019	CAP. CERA-SOL 4700P(Z)
C228	*87-018-133-019	CAP. CERA-SOL 4700P(Z)
C235	*87-018-133-019	CAP. CERA-SOL 4700P(Z)
C236	*87-018-133-019	CAP. CERA-SOL 4700P(Z)
C237	*87-018-133-019	CAP. CERA-SOL 4700P(Z)
C238	*87-018-133-019	CAP. CERA-SOL 4700P(Z)
J6	*87-033-192-010	SPEAKER TERMINAL 8P(SPEAKERS)
L5	*87-005-158-010	COIL 1UH(Z)
L6	*87-005-158-010	COIL 1UH(Z)
L7	*87-005-158-010	COIL 1UH(Z)
L8	*87-005-158-010	COIL 1UH(Z)
===SP+HP CIRCUIT BOARD SECTION===		
J1	87-009-169-010	JACK 6. 3 STAU(PHONES)
R143	*87-025-458-010	RES. METAL 470-2W
R144	*87-025-458-010	RES. METAL 470-2W
SW8	89-AA1-632-019	PUSH SW(SPEAKER A)
SW9	89-AA1-632-019	PUSH SW(SPEAKER B)
===POWER SW CIRCUIT BOARD SECTION===		
⚠	*87-033-147-019	FUSE CLAMP(E, K, Z)
⚠C87	*87-019-112-019	CAP. LINE 0. 01(E, K, Z)
⚠C87	*87-019-110-019	SPARK KILLER 0. 01D(H)
⚠FU3	87-035-365-010	FUSE T2A(E, K, Z)
⚠SW7	87-036-034-019	PUSH SW(POWER)
===AC VOLTAGE CIRCUIT BOARD SECTION (H MODEL)===		
⚠	*87-033-147-019	FUSE CLAMP(H)
⚠FU5	87-035-366-010	FUSE T2. 5A(H)
⚠FU6	87-035-366-010	FUSE T2. 5A(H)
⚠SW18	87-036-067-019	SLIDE SW(AC VOLTAGE)(H)
===OUTLET CIRCUIT BOARD SECTION (E, Z MODEL)===		
⚠	*87-033-147-019	FUSE CLAMP(E, Z)
⚠FU4	87-035-366-010	FUSE T2. 5A(E, Z)
⚠J7	87-049-514-010	AC OUTLET E(AC OUTLET)(E, Z)
===SEL IMP CIRCUIT BOARD SECTION===		
SW17	87-036-181-019	SLIDE SW(SPEAKER IMPEDANCE)
===MISCELLANEOUS===		
⚠	*82-187-796-019	AC CORD (BS)(K)
⚠	*82-187-797-019	AC CORD (E)(E, Z)
⚠	*87-034-749-019	AC CORD (H)(H)

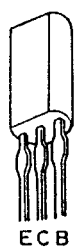
REF. NO.	PART NO.	DESCRIPTION
⚠	*87-085-184-010	AC CORD BUSHING D(H)
⚠	*87-085-185-010	AC CORD BUSHING E(E, K, Z)
⚠J7	87-049-416-010	AC OUTLET K-N(AC OUTLET)(K)
⚠J7	87-049-017-019	AC OUTLET(AC OUTLET)(H)
⚠PT1	89-AA1-608-019	POWER TRANSFORMER E(E, Z)
⚠PT1	89-AA1-606-019	POWER TRANSFORMER H(H)
⚠PT1	89-AA1-609-019	POWER TRANSFORMER K(K)

IC BLOCK DIAGRAM

• IC, UPC1237H



2SA1015
2SA970
2SC1815
2SC2240



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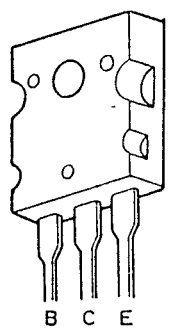

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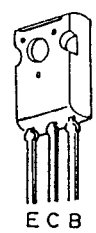

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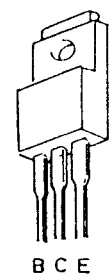

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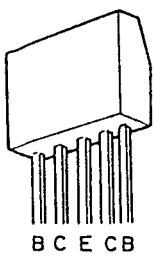

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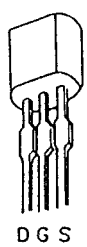
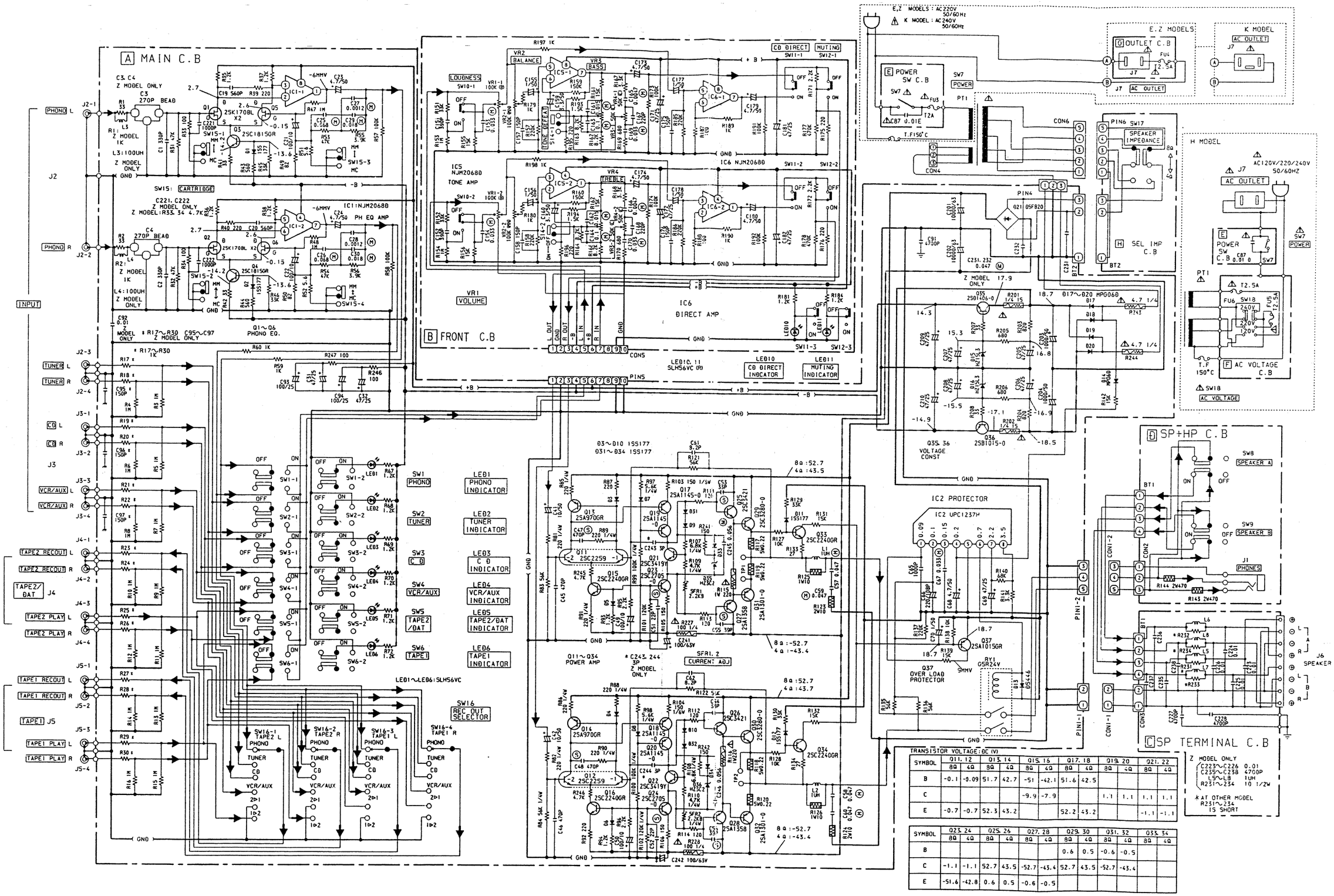


2SK170

SCHEMATIC DIAGRAM



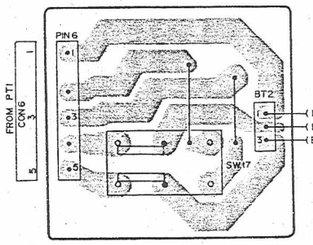
TRANSISTOR VOLTAGE: DC (V)

SYMBOL	Q11, 12		Q13, 14		Q15, 16		Q17, 18		Q19, 20		Q21, 22	
	8Ω	4Ω	8Ω	4Ω	8Ω	4Ω	8Ω	4Ω	8Ω	4Ω	8Ω	4Ω
B	-0.1	-0.09	51.7	42.7	-51	-42.1	51.6	42.5				
C					-9.9	-7.9			1.1	1.1	1.1	1.1
E	-0.7	-0.7	52.3	43.2			52.2	43.2			-1.1	-1.1

SYMBOL	Q23, 24		Q25, 26		Q27, 28		Q29, 30		Q31, 32		Q33, 34	
	8Ω	4Ω	8Ω	4Ω	8Ω	4Ω	8Ω	4Ω	8Ω	4Ω	8Ω	4Ω
B							0.6	0.5	-0.6	-0.5		
C	-1.1	-1.1	52.7	43.5	-52.7	-43.4	52.7	43.5	-52.7	-43.4		
E	-51.6	-42.8	0.6	0.5	-0.6	-0.5						

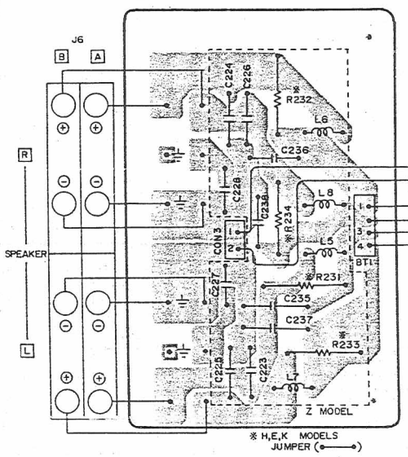
Z MODEL ONLY
C225~C226 0.01
C235~C238 4700P
L5~L8 1UH
R231~234 10 1/2W
*AT OTHER MODEL R231~234 IS SHORT

H SEL IMP C.B

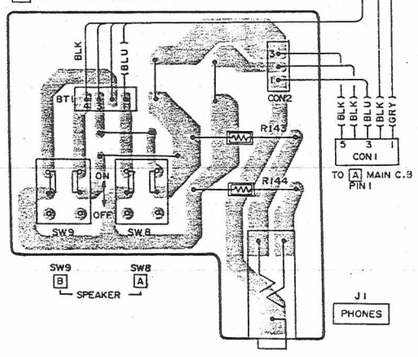


8Ω ⟷ 4Ω SW17 SPEAKER IMPEDANCE

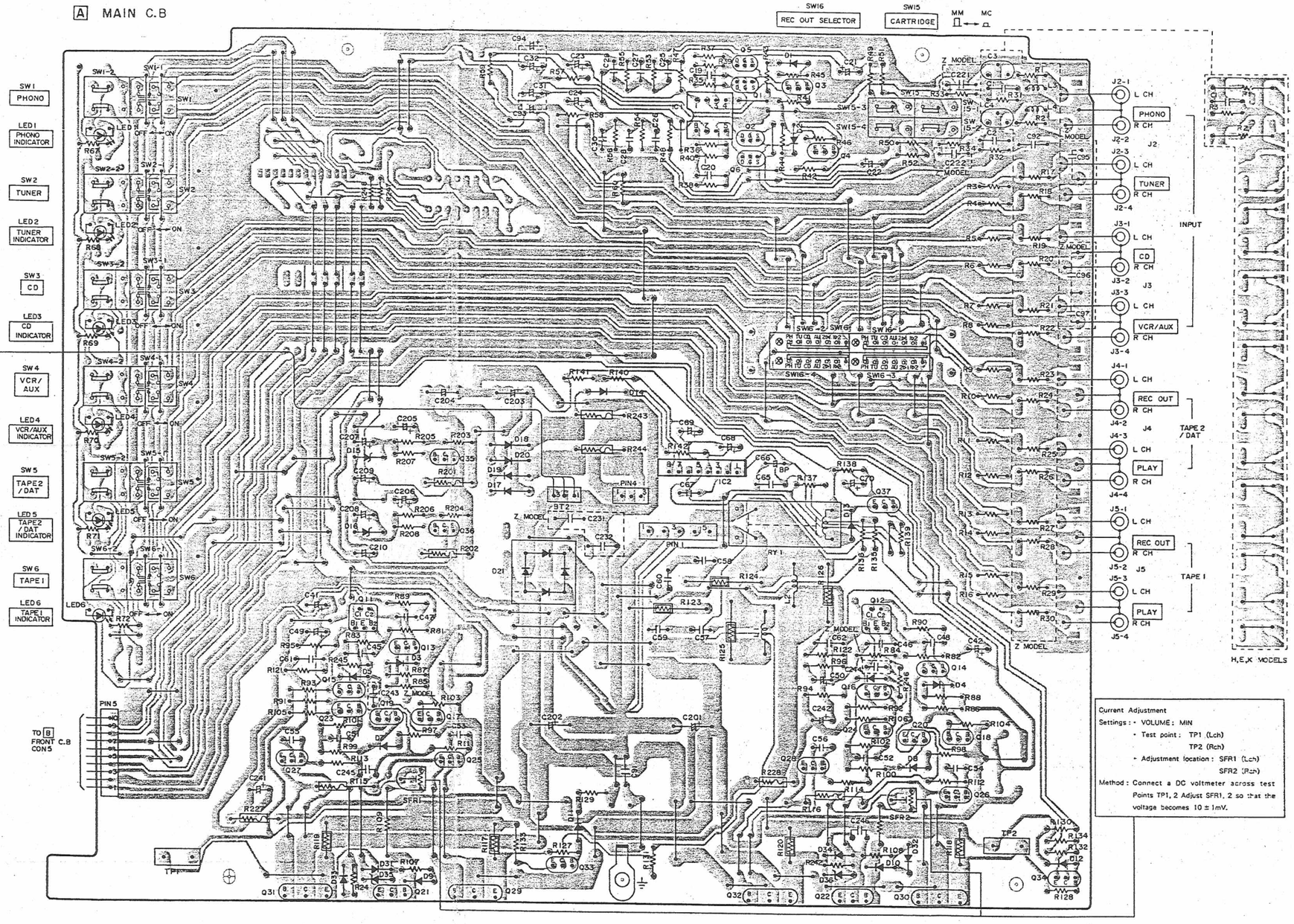
C SP TERMINAL C.B



D SP + HP C.B



A MAIN C.B


SW16 REC OUT SELECTOR
SW15 CARTRIDGE
MM
MC
SW1 PHONO
LED1 PHONO INDICATOR
SW2 TUNER
LED2 TUNER INDICATOR
SW3 CD
LED3 CD INDICATOR
SW4 VCR/AUX
LED4 VCR/AUX INDICATOR
SW5 TAPE2 /DAT
LED5 TAPE2 /DAT INDICATOR
SW6 TAPE1
LED6 TAPE1 INDICATOR
TO B FRONT C.B CON5
PIN5
Z MODEL
J2-1 L CH PHONO R CH J2-2
J2-3 L CH TUNER R CH J2-4
J3-1 L CH CD R CH J3-2
J3-3 L CH VCR/AUX R CH J3-4
INPUT
J4-1 L CH REC OUT R CH J4-2
J4-3 L CH PLAY R CH J4-4
TAPE 2 / DAT
J5-1 L CH REC OUT R CH J5-2
J5-3 L CH PLAY R CH J5-4
TAPE 1
H,E,K MODELS
Current Adjustment
Settings : - VOLUME : MIN
- Test point : TP1 (Lch)
TP2 (Rch)
- Adjustment location : SFR1 (Lch)
SFR2 (Rch)
Method : Connect a DC voltmeter across test Points TP1, 2 Adjust SFR1, 2 so that the voltage becomes 10 ± 1mV.

B FRONT C.B

SW11 CD DIRECT OFF ON

LED10 CD DIRECT INDICATOR

LED11 MUTING INDICATOR

SW14 TONE DEFEAT

VR1 VOLUME

SW12 MUTING OFF ON

PT1

TO A MAIN C.B PIN4

TO H SEL IMP C.B PIN6 CON6

AC240V 50/60Hz

J7 AC OUTLET (UNSWITCHED)

K MODEL

TF

SW10 LOUDNESS

VR2 BALANCE

VR4 TREBLE

VR3 BASS

TO A MAIN C.B PIN5

E POWER SW C.B

SW7 POWER OFF ON

H MODEL

E,K,Z MODELS

G OUTLET C.B

AC 220V 50/60Hz

J7 AC OUTLET (UNSWITCHED)

E,Z MODELS

F AC VOLTAGE C.B

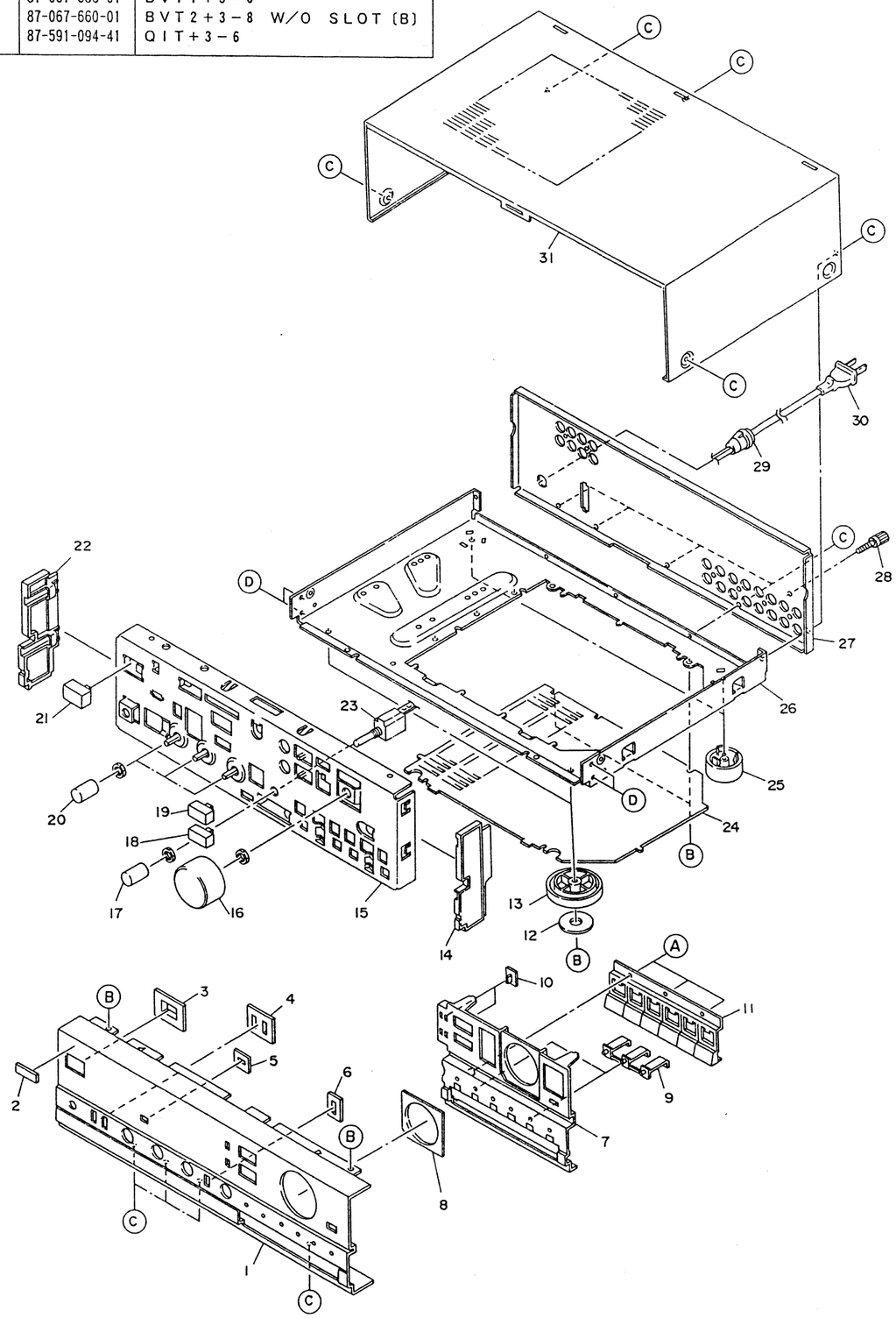
AC120V/220V/240V 50/60Hz

SW18 AC VOLTAGE 120V 220V 240V

H MODEL

EXPLODED VIEW – 1

REF. NO.	PART NO.	DESCRIPTION
A	87-067-579-01	BVT2+3-8 W/O SLOT
B	87-067-688-01	BVTT+3-6
C	87-067-660-01	BVT2+3-8 W/O SLOT (B)
D	87-591-094-41	QIT+3-6

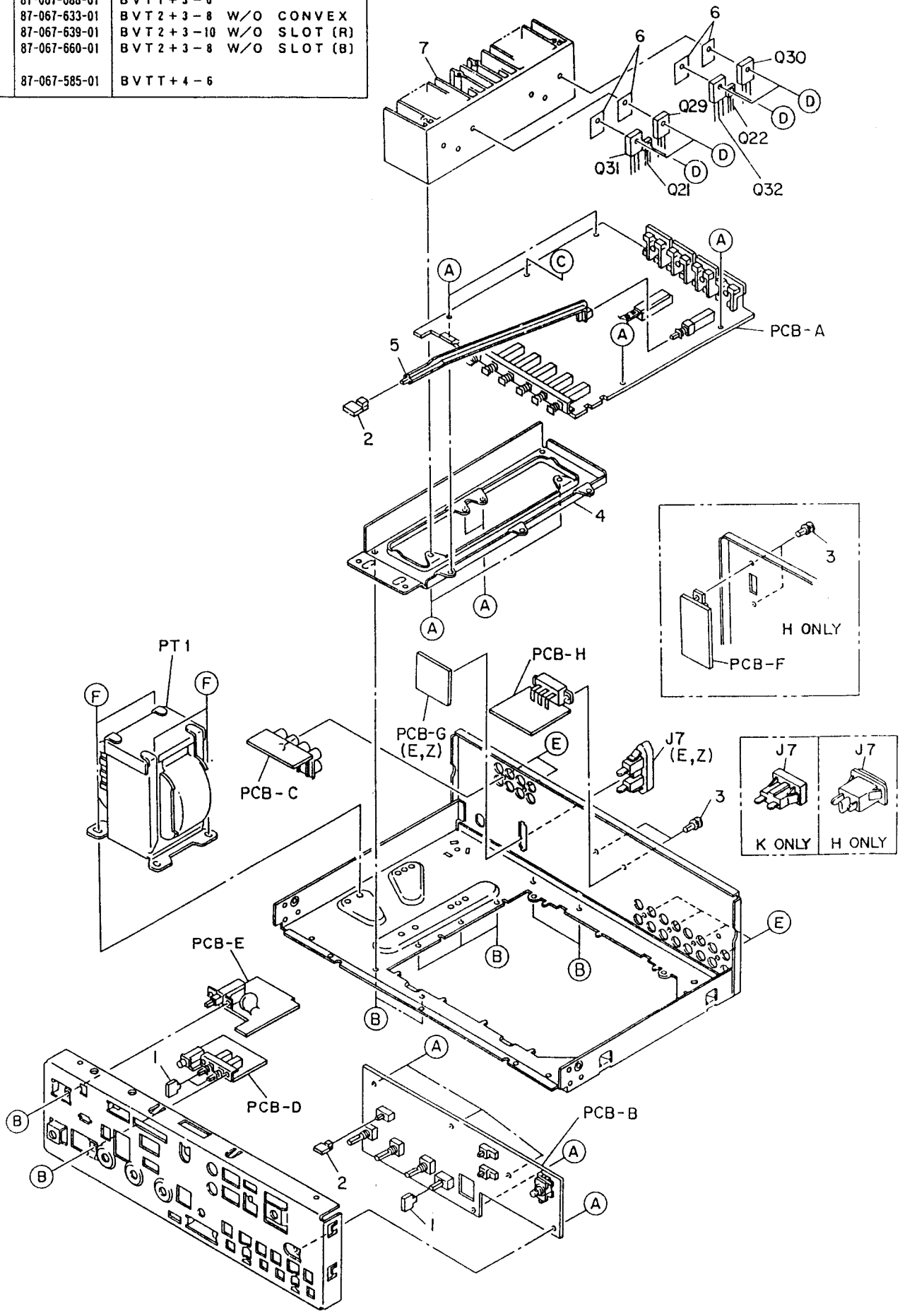


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1-1	★89-AA1-001-010	PANEL, FR	※	1
	1-2	★84-764-009-119	BADGE, AIWA		1
	1-3	★89-AA1-023-019	GUIDE, POWER	※	1
	1-4	★89-AA1-026-019	GUIDE, LOUD	※	1
	1-5	★89-AA1-027-019	GUIDE, DEFEET	※	1
	1-6	★89-AA1-024-019	GUIDE, SPEAKER	※	1
	1-7	★89-AA1-025-019	HOLDER. FUNCTION	※	1
	1-8	★89-AA1-020-019	PLATE, VOLUME	※	1
	1-9	★89-AA1-021-019	GUIDE, LIGHT FUNCTION	※	2
	1-10	★89-AA1-022-019	GUIDE, LIGHT MUTE	※	2
	1-11	★89-AA1-013-019	BUTTON, FUNCTION	※	1
	1-12	★84-731-027-010	FELT, FOOT		2
	1-13	★84-738-022-010	FOOT		2
	1-14	★89-AA1-003-019	PANEL, SIDE R	※	1
	1-15	---	CHASSIS, FR		1
	1-16	★89-AA1-007-019	KNOB, ROTARY VOLUME	※	1
	1-17	★89-AA1-008-019	KNOB, ROTARY BALANCE	※	1
	1-18	★89-AA1-028-019	BUTTON, MUTE	※	1
	1-19	★89-AA1-012-019	BUTTON, DIRECT	※	1
	1-20	★89-AA1-009-019	KNOB, ROTARY SELECT	※	3
	1-21	★84-721-023-010	PUSH BUTTON POWER		1
	1-22	★89-AA1-002-019	PANEL, SIDE L	※	1
	1-23	★89-AA1-636-010	RMT SW, ASSY	※	1
	1-24	★89-AA1-207-019	PLATE, BOTTOM	※	1
	1-25	★89-AA1-006-010	FOOT	※	2
	1-26	---	CHASSIS, MAIN		1
	1-27	★89-AA1-040-019	PANEL, REAR (H)	※	1
	1-27	★89-AA1-041-019	PANEL, REAR (HJ)	※	1
	1-27	★89-AA1-038-019	PANEL, REAR (E)	※	1
	1-27	★89-AA1-037-019	PANEL, REAR (K)	※	1
	1-27	★89-AA1-039-019	PANEL, REAR (Z)	※	1
	1-28	87-033-209-019	TERMINAL EARTH		1
	1-29	★87-085-184-019	BUSHING AC CORD (H)		1
	1-29	★87-085-185-019	BUSHING AC CORD (E, K, Z)		1
	1-30	★87-034-749-019	AC CORD (H)		1
	1-30	★82-187-797-019	AC CORD (E, Z)		1
	1-30	★82-187-796-019	AC CORD (K)		1
	1-31	★89-AA1-004-010	CABINET, MAIN STEEL	※	1

EXPLODED VIEW – 2

REF. NO.	PART NO.	DESCRIPTION
A	87-067-579-01	BVT2+3-8 W/O SLOT
B	87-067-688-01	BVTT+3-6
C	87-067-633-01	BVT2+3-8 W/O CONVEX
D	87-067-639-01	BVT2+3-10 W/O SLOT (R)
E	87-067-660-01	BVT2+3-8 W/O SLOT (B)
F	87-067-585-01	BVTT+4-6



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	2-1	★89-AA1-011-019	BUTTON, LOUD	※	3
	2-2	★89-AA1-010-010	BUTTON, DEFEET	※	2
	2-3	★87-084-063-019	RIVET NYLON 3-5.5	E, K, Z	2
				H	4
	2-4	---	HOLDER, HEET SINK		1
	2-5	★89-AA1-206-019	ROD, MM/MC	※	1
	2-6	89-AA1-602-019	SHEET	※	4
	2-7	---	HEAT SINK ASSY		1

■ ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1	★89-AA1-911-119	INSTRUCTION BOOKLET E/K/Z	※	1
	2	★87-032-845-019	PLUG SIEMENS (H)		1